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09/803,941	03/13/2001	Koichi Ikeshima	WATK:210	9068

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EXAMINER

DICUS, TAMRA

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/803,941

Applicant(s)

IKESHIMA, KOICHI

Examiner

Tamra L. Dicus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification has always referred to the raw material coating as being on the outside, as explained in the instant Summary of Invention. Thus the "inner circumferential wall" is considered new matter.

### *Drawings*

### *Specification*

The amendment filed 07-19-05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: A new drawing has been submitted to a "clamping force" particularly, to a clamping force from outer peripheral wall portions given to inner wall portions by big shrinkage caused by its large TEC and inner wall portions caused by clamping force. However,

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said term has not been originally filled and disclosed in the original disclosure, thus, the drawing is considered new matter.

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-2, 4-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5629067 to Kotani.

Kotani teaches a ceramic honeycomb structural body having an outer portion and center portion comprising cells, where the inner portion of the ceramic honeycomb structural body contains cordierite that is dried and fired, (col. 4, lines 55-65) completely filling in the outer circumferential wall portion. See Figures 4 and 5. The same radial direction is taught in col. 3, line 30-col. 4, line 25. Since the materials and process used are the same, the characteristics of claim 1 would be expected to be the same absent any evidence to the contrary. Kotani teaches a ceramic honeycomb structure body comprising cells (through-holes surrounded by partition walls) and an outer wall portion (see Fig. 5), where both the inner and outer walls are of

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crystalline cordierite having the same thermal expansion (see col. 7, lines 15-37). Kotani further teaches an outer coating formed on the outer surface of the body to reduce cells from cracking (see col. 2, lines 28-38). Kotani discloses the outer wall being thicker than the inner wall and the number of cells per unit area requirements of instant claims 4-5 in Example 1, Figures 4-5, and col. 6, lines 60+. At col. 8, lines 38-50, Kotani explains the outer coating serves as a reinforcing layer to yield excellent heat and thermal shock resistance. The outer circumferential wall is obtainable by firing a layer of raw material applied to a circumference of the ceramic honeycomb structure (col. 7, lines 15-20 and col. 8, line 36). The phrase "so that when the structure is cooled from the firing temperature, compression is applied to the inside partition wall from the outer...wall" is language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. See MPEP 2106.

Regarding claim 2, Kotani further teaches a honeycomb structure body where the inner wall portion of the honeycomb body structure is the same (cordierite ceramic) or different (ceramic fibers and cordierite) material from the outer circumferential wall portion (see col. 3, line 40-col. 4, lines 25 and lines 54-56).

Regarding claim 6, at col. 2, lines 38+, an open frontal area of 86% or more is shown in Figure 1.

Regarding claim 8 (new), Kotani teaches the outer wall is of crystalline cordierite (outer coating 16 has a primary crystal phase which consists of cordierite) at col. 7, lines 15-20.

Claims 1-3 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,060,148 to Matsubara et al.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Matsubara teaches a ceramic honeycomb structural body having an outer portion and center portion comprising cells, where the inner portion of the ceramic honeycomb structural body contains cordierite that is dried and fired, (col. 4, lines 5-10 and col. 6, lines 12-15 and 65-68) completely filling in the outer circumferential wall portion. See Figures 1 and 1b. Matsubara teaches a ceramic honeycomb structure body comprising cells (through-holes surrounded by partition walls) and an outer wall portion (see Fig. 1b and Fig. 3), where both the inner and outer walls are of crystalline cordierite, the same thermal expansion coefficient is inherent. Since the materials and process used are the same, the characteristics of claim 1 would be expected to be the same absent any evidence to the contrary. Matsubara discloses the outer wall being thicker than the inner wall requirements of instant claims 3 and 5 in Tables 1 and 2, and col. 4, lines 60-68 – col. 7, lines 1-60, col. 11, lines 60-col. 12, line 55). The outer circumferential wall is obtainable by firing a layer of raw material applied to a circumference of the ceramic honeycomb structure (col. 8, lines 47-60, electric furnace at maximum temperature). The phrase “so that when the structure is cooled from the firing temperature, compression is applied to the inside partition wall from the outer...wall” is language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular

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structure does not limit the scope of a claim or claim limitation. See MPEP 2106. Moreover, Matsubara teaches the compression applied to the inside wall from the outside wall (col. 4, lines 32-40).

Regarding claim 2, Matsubara further teaches a honeycomb structure body where the inner wall portion of the honeycomb body structure is the same (cordierite ceramic) or different (ceramic fibers and cordierite) material from the outer circumferential wall portion (see col. 3, line 40-col. 4, lines 25 and lines 54-56).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,629,067 to Kotani.

Kotani essentially teaches the claimed invention. Regarding instant claim 7, while Kotani does not teach the specific value of bulk density being  $0.26 \text{ g/cm}^3$  or less, Kotani does teach the wall thickness is varied to gain desired bulk density at col. 1, lines 25-34 and col. 2, lines 5-7 in order to reduce the heat capacity and effectively control exhaust emissions thereby improving the overall efficiency of a catalytic converter. Therefore, bulk density is an optimizable feature as taught by Kotani. It would be obvious to a person having ordinary skill in the art to modify the honeycomb structure taught by Kotani to include the bulk density  $0.26$

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g/cm<sup>3</sup> or less because Kotani teaches the wall thickness is varied to gain desired bulk density at col. 1, lines 25-34 and col. 2, lines 5-7 in order to reduce the heat capacity and effectively control exhaust emissions thereby improving the overall efficiency of a catalytic converter.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,629,067 to Kotani and further in view of USPN 5,346,722 to Beauseigneur et al.

Kotani substantially discloses the claimed invention except for a partition wall thickness of less than 0.1 mm. Beauseigneur discloses several examples of honeycomb structures having a range of the numbers of cells per unit area values and typical wall thickness requirements of claims 3-5 in catalytic converter applications at col. 3, lines 50-60. It would be obvious to a person having ordinary skill in the art to modify the honeycomb structure taught by Kotani to include the desired requirements of Beauseigneur to produce a desired honeycomb structure that exhibits efficient extruder or flow rates.

### ***Response to Argument***

Applicant's arguments filed 02-06-06 have been fully considered but they are not persuasive.

Applicant alleges that the raw material is on the inside and points to Fig. 1(b), portion 3. However, portion 3 is clearly on the outside, not inside. Further the specification has always referred to the raw material coating as being on the outside, as explained in the instant Summary of Invention. Additionally, depending upon the direction of reference viewing from the inside out, or from the outside in, the "outer" is the same as the "inner" wall of the honeycomb as the Figures all show the same place of application. Applicant's arguments are not persuasive.



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Applicant argues the submitted drawing was not a drawing and a part of the remarks, however, the drawing was submitted as a separate sheet as the page numbers are absent and do not continue from the remarks. To correct this matter, Applicant should make the record clear that the submitted drawing should be cancelled.

See MPEP 608.02(t): If a drawing figure is canceled, a replacement sheet of drawings must be submitted without the figure (see 37 CFR 1.121(d)). If the canceled drawing figure was the only drawing on the sheet, then only a marked-up copy of the drawing sheet including an annotation showing that the drawing has been cancelled is required. The marked-up (annotated) copy must be clearly labeled as 'Annotated Sheet' and must be presented in the amendment or remarks section of the amendment document which explains the changes to the drawings (see 37 CFR 1.121(d)(1)). The brief description of the drawings should also be amended to reflect this change.

Applicant argues the claim 1 now refers to compression applied from the outside, Applicant argues paragraphs 0020 to 2023 (0023) of the original specification shows support for the new diagram to a clamping force relation to the TEC differential. However, support was not found at the paragraphs, nor anywhere within the Application. Thus, it is considered new matter and should be removed. Further, Kotani will inherently perform in the same manner as the same material and construction is provided by the prior art.

Applicant argues that there is no contemplation in Kotani applying an outer layer to an inner circumferential wall. However, the same structure and placement of material is the same as the Figures of the instant disclosure. Applicant has not made a persuasive argument because the claim calls for an outer coating that is the same or different from the honeycomb structure.

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Applicant has not amended the claim to the specific coating that produces a larger TEC differential. The Examiner is in agreement that if the materials are the same, then the product will function the same. However, Applicant has not amended the claim to set forth what the specific material is that directly effects the TEC differential in the same way as Applicant intends. However, Kotani explicitly teaches the material is either the same (crystalline cordierite or cordierite material that is fired producing crystalline cordierite (at col. 4, lines 55-57 – honeycomb body; col. 7, lines 14-20 –outer coating) or different (the coating may further comprise one of the colloidal oxides such as colloidal alumina at col. 7, lines 50-col. 8, line 50 to improve the honeycomb being excellent in heat and thermal resistance), therefore the TEC differential as claimed must be present. Thus, Kotani is no way is a contradictory or absent teaching.

Applicant further argues Kotani teaches firing is optional and the patentees say nothing about firing the coated portion. However, process limitations are not germane in a product claim if the same material is present. Kotani teaches the same crystalline cordierite (col. 7, lines 14-20) that Applicant sets forth in the instant disclosure at page 8, line 14, that explains “a raw material of the cordierite...is subjected to extrusion to form ...a kaolin crystal” and “in the later firing step, a cordierite crystal...is generated”. Thus both Kotani and the instant Application are consistent and not contradictory as Applicant alleges. Further it is of no consequence why the patentees suggest using cordierite because of a small thermal expansion coefficient if the same materials are used.

Applicant argues the properties concerning the radial array of cells. When the same materials are used, the TEC is larger, however when different materials are used the TEC is the

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same, thus until the claim is amended to reflect which scenario Applicant desires to clearly show what specific materials produce the larger TEC differential, the Examiner maintains the rejections. Moreover, Kotani explicitly teaches a same and different material as in Applicant's specification, thus either TEC differential, whether larger or smaller will be the same effect as Applicant. Applicant does not require either way, the same or different material, thus until applicant amends the claim to reflect which option is desired, the rejection will stand.

Applicant further argues process steps e.g. a drying step rather than a firing step. Again, process limitations in a product claim are not limited to the steps. It is the resultant end product that must be the same, and in this case, Kotani teaches both same or different material to produce the TEC differential.

Applicant argues that the major patentable difference is to application of a compression stress at ambient temperature while no compressive stress is applied to the inside of the structure at a firing temperature. Again, process steps do not limit a product claim. If Applicant's novelty is in the process, then Applicant should claim the process and not the product. It is of no consequence if Kotani applies different steps than Applicant because the same end product is produced.

Applicant argues Matsubara does not teach the structure of the claimed invention. Matsubara explicitly teaches the same material at col. 6, lines 12-15 and firing via an electric furnace at 700 degrees C at col. 8, lines 40-60, thus the compression as claimed must be the same as instant claim 1 contrary to Applicant's arguments.

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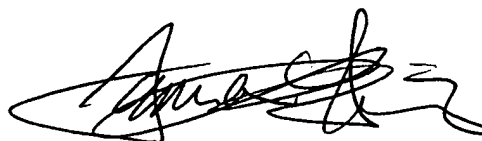
Beauseigneur is still used to teach the same number of cells per unit area and wall thickness and the exact same materials involved, a honeycomb structure and an alumina/catalytic coating on the outside and fired. Thus, the rejections are maintained for reasons of record.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tamra L. Dicus  
Examiner  
Art Unit 1774

March 13, 2006



RENA DYE  
SUPERVISORY PATENT EXAMINER

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